

Uranus, Neptune, Pluto and How to Observe Them

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Richard W. Schmude, Jr.

Uranus, Neptune, Pluto and How to Observe Them

 Springer

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This book is dedicated to the many people who have helped me along the way: First, to my father and mother, Richard and Winifred Schmude, who first showed me the stars and answered my many science questions; next, to the many fine teachers and professors that I have had along the way; also, to all of the fine people at Optec, Inc., who make a great line of photometers without which I would not have been able to carry out much outer solar system research; and finally, to the many friends who have encouraged me along the way, including Jim Fox and Jerry Sherlin of the Astronomical League, Donald Parker, John Westfall, Ken Poshedly, Richard Jakiel, and Walter Haas of the Association of Lunar and Planetary Observers, Richard McKim and John Rogers of the British Astronomical Association, and Kim Hay of the Royal Astronomical Society of Canada.

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Author's Note

I became interested in astronomy initially when I saw what appeared to be a countless number of stars from my parent's home in Cabin John, Maryland. I was no older than six when I had this life-changing view of the night sky. I purchased my first telescope when I was 15 years old; it had an aperture of 1.5 cm and a magnification of 8X. I enjoyed looking at the Moon and at other distant objects through this telescope. I was also able to let others look through this small wonder, including a couple of siblings and at least one neighbor.

Even as a young boy, I had been fascinated with all of the planets. My first view of Uranus was from my parent's home near Tomball, Texas, on March 20, 1987. In 1989, I began estimating the brightness of Uranus with binoculars, and, a year later, John Westfall asked me to be the outer planets coordinator for the Association of Lunar and Planetary Observers (ALPO). With this appointment, I purchased an SSP-3 solid-state photometer from Optec Inc. and began carrying out brightness measurements of Uranus and Neptune.

Our knowledge of the outer Solar System has increased tremendously in the last 40 years. As a boy, I would often look at astronomy textbooks to learn about the planets. On many occasions, I noticed question marks next to Uranus, Neptune, and Pluto in tables summarizing planetary data. The question marks were there because we did not know much about these objects in the late 1960s. Later, in college, I remember that there was just one page devoted to Uranus, Neptune, and Pluto in my college astronomy textbook; this was in 1981. Once again, we did not know much about these outer worlds and, hence, there was little to write about. With the Voyager 2 flybys of Uranus (1986) and Neptune (1989), we have learned a great deal more about them. The Hubble Space Telescope, electronic cameras, and advanced computer technology have also given us more information about Pluto. In the early twenty-first century, humankind has gained enough information about these distant planets to justify the writing and publication of this book.

This book is broken down into two major sections. The first section summarizes our current knowledge of Uranus (Chapter 1), Neptune (Chapter 2), and Pluto (Chapter 3). The second section describes observing projects that one can carry out with small telescopes and binoculars (Chapter 4), medium-sized telescopes (Chapter 5), and large telescopes (Chapter 6). Finally, an appendix, a bibliography, and an index are included.

Two organizations that are engaged in serious studies of the remote planets are the British Astronomical Association (BAA) and the Association of Lunar and Planetary Observers (ALPO). The current remote planets' coordinator of the BAA is Roger Dymock, who can be reached at: roger.dymock@ntlworld.com, and the current remote planets coordinator of the ALPO is myself, Richard W. Schmude, Jr. I can be reached at: Schmude@gdn.edu. If one makes observations of one of these distant worlds, please let one or both of us know about it. Many thanks!

About the Author

Dr. Richard W. Schmude, Jr., was born in Washington, D.C., and attended public school in Cabin John, Maryland; Los Angeles, California; and Houston, Texas. He graduated from Texas A & M University with a Bachelor's degree in Chemistry, and a few years later, another Bachelor's degree in Physics. Later, he obtained a Master's degree in Physical Chemistry and a Ph.D. in Physical Chemistry. He worked at Los Alamos National Laboratory as a graduate research assistant from 1990 to 1992. While at Los Alamos, he purchased his first photometer and began measuring the brightness of Uranus and Neptune.

In 1990, Richard was appointed Coordinator of the Remote Planets section of the Association of Lunar and Planetary Observers. He began teaching at Gordon College in Barnesville, Georgia, in 1994 and has taught chemistry, physics, astronomy, and physical science there ever since. He has published over 100 scientific papers in many different journals and has given many talks and workshops to community organizations.